FAA AVIATION NEWS

FEBRUARY 1970

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COVER

Ice whiskers on aircraft and winter-long tie-downs are typical of the season, but not universal.
See page 4.

FAA AVIATION NEWS

DEPARTMENT OF TRANSPORTATION / **FEDERAL AVIATION ADMINISTRATION** VOL. 8, NO. 10

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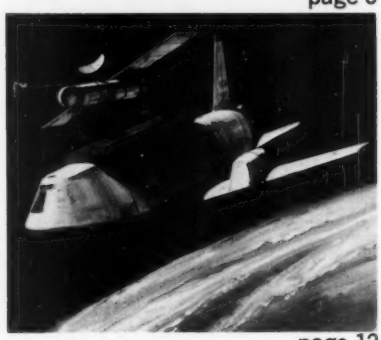
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John A. Volpe, *Secretary of Transportation*

John H. Shaffer, *Administrator, FAA*

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Current annual volume of five million passengers makes air taxi service big business. FAA operating rule amendments will increase safety margins.

AIR TAXI SAFETY STANDARDS

Extensive amendments to air taxi operating rules have been announced by Secretary of Transportation John A. Volpe. The new rules, which go into effect on April 1, 1970, apply to all air taxi and commercial operators of small aircraft (12,500 lbs. or less), including small helicopters, operated in either scheduled or non-scheduled service.

Recognizing the rapidly broadening scope of the air taxi industry, the new regulations reflect many of the operating requirements of the major air carriers. Small airplane operations of air carriers, such as those conducted by some Alaskan carriers and by transport helicopter operators, are also affected.

Operators must apply to the Federal Aviation Administration for new operating certificates by May 31, 1970. Each operator certificated or recertificated after March 31, 1970, must also:

- Establish procedures to insure that each passenger is familiar with both oral and written briefing information before takeoff.
- Prohibit boarding by any passenger who appears to be intoxicated and prohibit passengers from drinking from their own supply in flight.
- Use two pilots for airplanes that have more than nine passenger seats regardless of the actual number of passengers aboard.
- Use a cabin attendant for airplanes having more than 19 passenger seats.
- Place and secure cargo so it is not above a passenger.
- Prepare a company manual for the use of flight, ground operations, and maintenance personnel unless otherwise determined by FAA field offices.
- Prepare and retain for 30 days load manifest records for multi-engine flights having 10 or more passenger seats and requiring two pilots. (Load manifest records provide information on passengers and cargo, including weight and balance data.)
- Determine weight and center of gravity data by April 1, 1971, for multi-engine aircraft, calculated from actual weighing during the preceding three years. Operators of new multi-engine aircraft are given three years from the date of original airworthiness certification to comply.
- Report daily to FAA any in-flight failure, defect, or malfunction occurring in multi-engine operation with respect to 16 specific maintainance items. Reports are required within 24 hours unless mailing facilities are not available, in which case report must be made from first mailing facility available.
- Submit monthly summaries of incidents that interrupt flights such as propeller featherings and mechanical difficulties or malfunctions other than those listed in the required daily reports.

The rules also call for:

- Increasing pilot-in-command qualifications for IFR (instrument flight rules) operation from 500 to 1,200 hours of flight experience.
- Limiting pilots to a maximum of eight hours flight duty in any 24-hour consecutive period, except for flights requiring two pilots, in which case maximum flight time duty may be 10 hours. When flight time duty exceeds eight hours, crews must have 16 hours of rest before further flight. In all cases pilots must have at least 10 consecutive hours of rest in any 24 consecutive hours.
- Initial and recurrent testing of each company pilot to determine competence in specific areas of knowledge and in practical skills and techniques. Testing must be conducted by authorized check pilots or FAA inspectors.
- Twelve-month line checks of pilots-in-command covering IFR operation over representative airways to check familiarity with routes and airports.
- Twenty-five hours of proving tests for all turbojets and other aircraft certificated to carry more than 10 occupants that are new to the operator. New aircraft in service on April 1, 1970, are excluded from the proving tests.

An optional program of aircraft inspections outlining detail, scope, and frequency of inspections, including inspection cycles, is also permitted. The program must be approved by FAA and carried out by an FAA-approved repair station or certificated mechanic with airplane and powerplant ratings.

FAA records show that over the past 15 years the overall number of air taxi operators has increased from approximately 2,000 to 4,000. An estimated five million passengers a year now use air taxis, and about 1.5 million fly on scheduled air taxi service. ■

A WINTER'S TALE

All that glitters is not cold! Bright sunshine and fair skies predominate in some regions over the winter, offering unexpectedly good flying conditions

Winter is by no means a bad flying season in all of the United States. It may be grim in Alaska and the far North, but in some regions flying conditions may be superior to those commonly found in summer.

In most of the 48 adjacent states, what we call "winter weather" makes its presence known in late autumn, intensifies during the true winter months, and tapers off as spring enters mid-season. Winter weather owes its onset to changes in temperature, wind, moisture, and air masses interacting with terrain.

The air masses are influenced by three major mountain ranges which span the breadth of the land: the Sierra Nevada/Cascade Ranges along the Pacific Coast; the Rockies; and the Appalachian chain in the East.

The *Pacific Coastal region* is made up of California, Oregon, and Washington west of the Cascade/Sierra Range. The climate is related but by no means identical. Pilots taking off from airports in the Los Angeles area on a clear, shirt-sleeve winter day may encounter freezing rain enroute to San Francisco and points north on an average of two days a month. Before venturing into this area pilots should check their anti-icing gear.

Aircraft icing is a threat 35 per cent of the winter season from the surface up to 25,000 feet in Washington and Oregon, but only 5 to 20 per cent of the time in California.

Precipitation above the California border is likely to occur 17 to 22 days a month in winter, mostly snow, with accumulation of one to 120 inches a month, depending on elevation. Precipitation in California below San Francisco is mostly rain, but snowfall may be heavy in the mountains.

Pilots taking a lengthy flight up the West Coast can expect ceilings of at least 1,000 feet and visibility of three miles or better 75 per cent of the time throughout most of this region. During winter, westerly winds predominate.

The air masses lose much of their moisture in their eastward passage up and over the Sierra/Cascades producing heavy precipitation in the mountains, but relatively little in the Intermountain Region between the Rockies and the Coastal range. Winter is the dry season in Montana, Idaho, and Wyoming, but snow does fall in these States, averaging 6 to 10 inches a month. Further south in Nevada, the average monthly snowfall ranges from less than 1 inch to 9 inches; in Utah, the average is from 13 to 60 inches; northern Arizona has from 6 to 28 inches.

In the Intermountain Region, freezing rain is a negligible consideration, averaging less than one day a month in eastern Washington, and less than four days for the entire winter season in Montana, Idaho, Wyoming, Nevada, Utah, and Arizona. However, aircraft icing, from the surface to 25,000 feet, is a hazard 35 per cent of the time in the northern half of this region, and from 5 to 20 per cent of the time in the southern half.

East of the Rockies, cold polar air pours down from Canada with little obstruction across the *Central Plain* states, extending from Canada to the Texas/Mexican border, from Kansas to Kentucky. Contact with the warmer ground can cause turbulence and poor visibility if the air mass stagnates. This can lead to inversions which trap haze, smoke and dust. Visibility improves generally as the sun warms the air.

Winter presents the most adverse flying conditions in the upper Central Plain states —North Dakota, South Dakota, Nebraska, Colorado, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Indiana, Michigan, and western Ohio. Because of the flat terrain, wind velocities are relatively high, especially the *foehn* (warm, dry) winds blowing down the eastern slope of the Rockies and through mountain passes.

Icing conditions in these northern states are likely 5 to 30 per cent of the time, from the ground up to 25,000 feet, while freezing temperatures can be encountered most of the time from 2,000 feet MSL. Winter rain is frequently encountered around the Great Lakes, but most precipitation is snow. The average winter monthly snowfall is 11 to 19 inches.

In the southern Great Plains, the flat land is broken by elevations of about 2,500 feet in Oklahoma and mountains areas above 10,000 feet in New Mexico. States included are New Mexico, Texas, Oklahoma, Arkansas, and Louisiana.

Aircraft icing conditions are likely 5 to 15 per cent of the time from the surface to 25,000 feet.

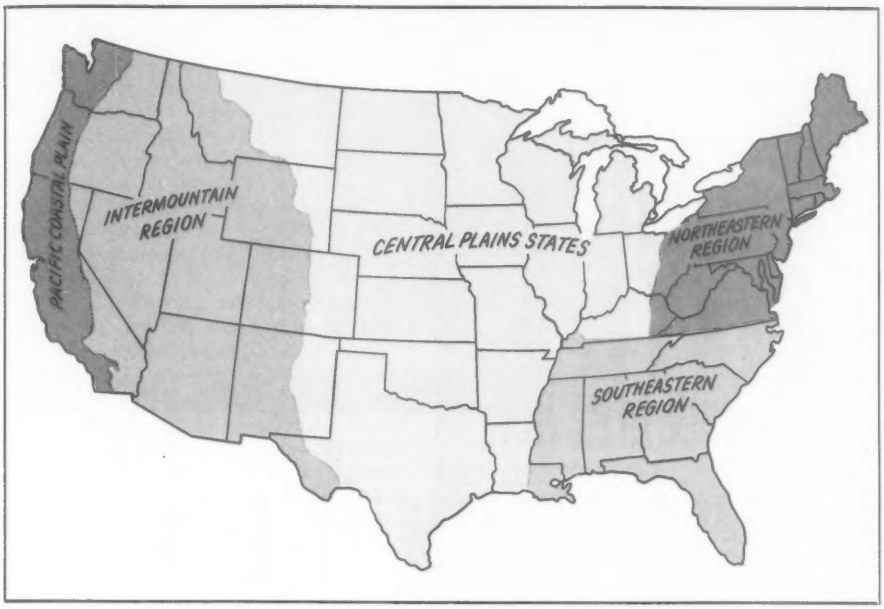
Snow presents almost no problems in southern Texas, southern New Mexico, and most of Louisiana where less than an inch per month falls. One to five inches of snow per month is normal for northern New Mexico, northern Texas, Oklahoma, and Arkansas.

Strong winds are characteristic of this area, with winds in excess of 25 mph blowing 5 to 10 per cent of the time. Visibility of three miles or more, and ceilings of at least 1,000 feet occur more than 95 per cent of the winter in southwest Texas and southern New Mexico. In the remainder of the South Central Plains, VFR conditions prevail 70-90 per cent of the time.

Most of the states in the southeastern corner of the United States, which border on the Gulf of Mexico and the Atlantic—western Louisiana, Mississippi, Alabama, Florida, and Georgia—do not have mountains of any significance, so the climate is similar throughout the region. Tennessee and the Carolinas, however, are split by the Appalachians, where winter is cold and snow is a regular part of the weather pattern. On the plains that slope eastward from upland North Carolina winters are mild, with freezing temperatures rarely exceeding three-day periods. Throughout the southeast, the average height of the freezing level is near 10,000 feet, although it may drop all the way to the surface on occasion.

Along the Gulf and South Atlantic Coasts, the average winter rainfall ranges from 16 inches in Louisiana down to about 6 inches over Florida and back up to 12 inches in North Carolina. In the high terrain of the southern Appalachians, precipitation may be greater than 20 inches.

Throughout the region, aircraft icing is a hazard from the surface to 25,000 feet about 10 per cent of the time. Freezing can occur at ground level but is more commonly found at about 10,000 feet. Freezing rain can be



TYPICAL WINTER WEATHER IN SELECTED REGIONS

REGION	PREDOMINANT TERRAIN	WIND, RAIN, SNOW	VISIBILITY, ICING (surface to 25,000 ft)
PACIFIC COASTAL: Calif., Ore., Wash. (west of Sierra/ Cascade ranges)	Coastal mountains, valleys, desert, running North-South.	**Wind:** strong, westerly. **Precipitation:** 17-22 days per month, except Southern Calif. (4-5 days.) Heavy snow in higher mountains.	**Aircraft Icing:** Occurs 35% of winter in Oregon, Wash.; 5-20% of winter in California. *VFR: 70-75% of winter along the seacoast; 85-90% inland.
INTERMOUNTAIN: Eastern Wash. & Ore., Mont., Idaho, Wyo., Utah, Nev., Ariz.	High rolling plateaus, desert, some mountains over 14,000 ft.	**Wind:** westerly, strong; severe gusts in low pressure areas. **Precipitation:** North of Salt Lake, 9-15 days per month; to the south, 6-9 days except for southern Ariz. (2-3 days).	**Aircraft Icing:** hazardous 35% of winter north of Salt Lake; 5-20% to the south. *VFR: 85-90% of winter
CENTRAL PLAINS: N.D., Minn., Wis. Iowa, S.D., Neb., Colo., Kans., Mo., Ind., Mich., N.M., Okla., Ark., Tex., Western La.	Vast plains with mountains and high plateaus in western section.	**Wind:** strong, northwesterly; may shift to southwest prior to frontal passage. **Foehn** (dry winds in excess of 25 mph) occurs 5-10% of winter, especially on slopes of Rockies. **Precipitation:** 6-12 days per month, but much wetter on lee side of Great Lakes. Dryer generally in the southwestern states (N.M., Okla. & W. Tex., 1-5 days).	**Aircraft Icing:** Occurs 5-30% of winter in the northern states; 5-15% in the southern states. *VFR: 80-95% of winter in the western states, 70-90% elsewhere, except for Great Lakes area (65-80%).
SOUTHEAST: Tenn., Eastern La., Miss., Fla., Ala., Ga., N.C., S.C.	Coastal plains and part of the Appalachian highlands.	**Wind:** fairly strong, westerly winds predominate during winter. **Precipitation:** average number of days ranges from 7-11, predominantly rain.	**Aircraft** Icing: occurs from 0-10% during the wintertime. *VFR: 90% of the time over most of the region; 80-85% in Tenn.
NORTHEAST: Ky., Ohio, N.Y., Va., West Va., Vt., N.H., Mass., R.I., Conn., N.J., Del., Md., Me., Penna.	Coastal lowlands bordered on the west by Appalachian mountains.	**Wind:** westerly; mountain & valley winds exceed 25 mph from 5-15% of winter. **Precipitation:** averages 11-14 days per month except for lee side of Great Lakes (16-18 days).	**Aircraft Icing:** occurs 5-30% of winter; greatest frequency in Great Lakes area. *VFR: 75-80% over most of region; 60-75% on the lee side of the Great Lakes.

* Ceiling 1,000 ft. or higher; visibility 3 miles or better.

expected about one day per month, except in Florida and along the coastlines, where it is rare. Winds of from 10 to 12 mph, blowing easterly in south and central Florida, and westerly in the rest of the region, are normal during the winter.

Poorest flying conditions are found in Tennesseee, where ceilings of 1,000 feet or more with visibility three miles or more, occur only 80 to 85 per cent of the time, compared to 90 per cent of the time for the rest of the southeast. Ceilings below 5,000 feet occur 30 to 50 per cent of the time over all of this area in the winter.

Weather in the northeastern United States is strongly affected by the northern Appalachians, which extend into Canada.

Northeastern states affected by the Appalachians include Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, eastern Ohio, Maryland, Virginia, West Virginia, and Kentucky.

Cold air brought south by the continental polar air mass sweeps across the Great Lakes where it picks up moisture: Moving easterly over the Appalachians, the air mass cools and yields heavy snowfalls over western Pennsylvania, western New York, and the higher mountain regions. Heavy rains also fall during the winter in this region.

Aircraft icing is likely 5 to 30 per cent of the time from the surface to 25,000 feet. Freezing temperatures can be expected from 10,000 feet upward, but are also a threat from the ground up in the interior and over the mountains. Freezing rain occurs along the northern border of the U.S. and in the mountainous areas about three days a month, and about one day a month in the rest of the region.

This is an area of high wintry winds, usually westerly, and strongly influenced in local direction and force by the Appalachians. Surface wind speeds exceed 25 mph from 5 to 15 per cent of the time. Winds are lightest in the early morning hours.

Winter does not increase the area's normal amount of precipitation, which averages 11 to 14 days a month. On the lee side of the Great Lakes, the average number of precipitation days increases to 16-18 per month.

As to be expected, the poorest flying weather is found on the lee side of the Great Lakes and in the mountains. Ceilings in these areas of 1,000 feet or higher, and visibility of three or more miles can be expected no more than 60 to 70 per cent of the time. In the remainder of the northeast these conditions exist from 75 to 85 per cent of the winter.

Exact weather conditions en route and at terminals can be obtained from FAA flight service stations—no further away than a phone call. (Based in part on data provided by TAC ATTACK, October, 1969) ■

The SOARING SIXTIES: A Decade in Review

DURING the decade of the Sixties, civil aviation activity in the United States showed a general increase in all categories with one notable exception—the accident rate per 100,000 hours flown in general aviation and in air carrier and commercial air carriers (including holders of commercial operators certificates) operations showed a progressive decline.

Over this ten-year period general aviation aircraft increased their active numbers from 76,549 to 124,237. General aviation flying hours during that time climbed from 13,121,000 in 1960 to 24,900,000 in 1969.

In 1960 there were 4,793 accidents of all kinds—fatal and non-fatal—in general aviation, resulting in a rate of 36.5 accidents per 100,000 hours flown. In 1969 general aviation accidents totaled 4,931, a numerical increase of 138, while the rate per 100,000 hours was cut in half (18.8).

On January 1, 1968, the National Transportation Safety Board adopted a greatly modified definition of what constituted a reportable accident, a change that affects non-fatal accident and rate reporting. Under the new system, dollar value damage criteria are no longer used. A non-fatal accident is reportable only when there is serious personal injury, or substantial damage adversely affecting the structural strength, performance, or flight characteristics of the plane and which would require major repairs or replacement.

For reporting purposes, engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small puncture holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage."

Consequently, the figures on all types of accidents before January 1, 1968, are not directly comparable to those that follow except for fatal accidents.

The *fatal accident* rate in general aviation has shown a steady decline—except for 1963, 1964 and 1965 when it stood fast at 3.2 per 100,000 hours. In 1966 the rate was 3.1; it dropped to 3.0 in 1967 and 1968, and to 2.61 in 1969.

While the *fatal accident* rate went down in an uneven descent, the rate of persons killed in general aviation flying accidents per 100,000 flying hours has remained almost even. In 1961, 761 persons lost their lives—a rate of 5.6 fatalities per 100,000 hours. The rate was 5.57 in 1969, when 1,388 people died in general aviation accidents.

Air taxi accidents increased from 120 in 1968 to 186 in 1969. There were 28 *fatal* air taxi accidents in 1969, four less than in 1968. The number of fatalities increased from the 1968 figure of 84 to 142 in 1969.

More than half of these fatalities—78—occurred in four accidents. Thirty-five persons died in one accident (Hawthorne Nevada Airlines), 19 in another (Puerto Rican International), 14 in the third (Air South), and 10 in the fourth (Puget Sound). In addition, a number of persons died when several air taxis were lost for unknown reasons in Southeast Asia while operating in or near theaters of military action.

The air carrier fleet completed its safest year in 1969 when all accidents totaled 68, a rate of 1.0 accidents per 100,000 flying hours. In 1968, the air carriers—which includes commercial operators, supplemental carriers, and cargo carriers—experienced 73 accidents, a rate of 1.1.

Fatal air carrier accidents fell from 16 in 1968 to 11 in 1969. Deaths were down from 352 in 1968 to 160 last year, the lowest number since 1957. The rate was 2.3 fatalities per 100,000 hours compared with 5.4 in 1968.

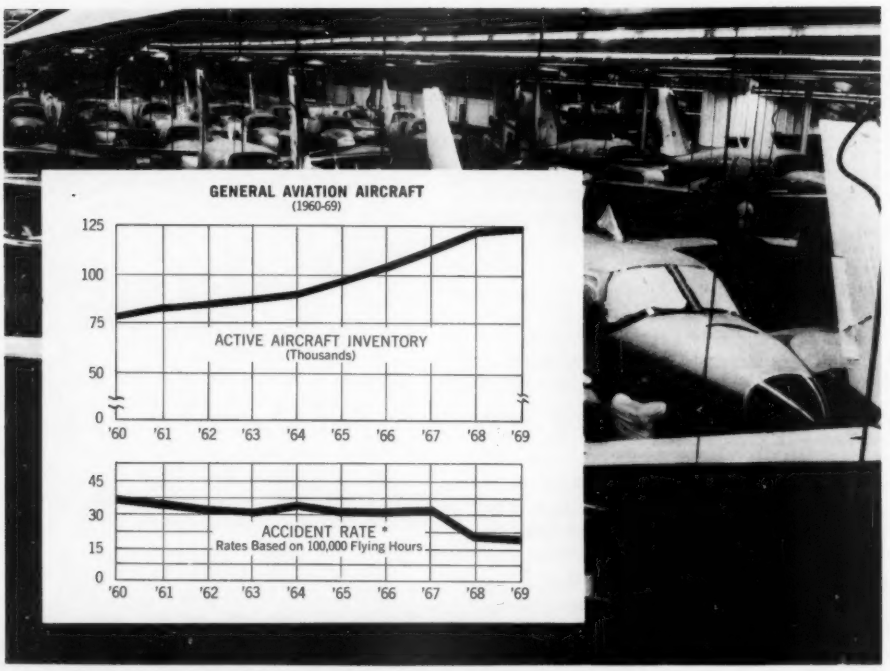
The 68 air carrier accidents in 1969 take on a different value when they are assigned to the groups that make up the air carrier fleet. Thus, there were 59 accidents involving scheduled air carriers, three among commercial operators (certificated by FAA and flying large aircraft—but not Civil Aeronautics Board certificated), three among supplemental carriers and three among cargo carriers.

Similarly, in scheduled air carrier operations, fatal accidents fell from 14 to 10, dropping the fatal accident rate per 100,000 flying hours from 0.24 to 0.16. Fatalities declined from 349 in 1968 to 158 in 1969, and the fatality rate dropped from 5.98 to 2.50. Commercial operators had only three accidents in 1969, one of which resulted in two deaths, producing a fatal accident rate of 0.73 per 100,000 flying hours and a fatality rate of 1.46.

Supplemental air carriers had nine accidents in 1968 but only three in 1969, dropping the rate from 2.80 to 0.91. This group had one fatality in 1968 but none in 1969.

Cargo carriers had three accidents in 1969, one less than 1968, resulting in a drop in the accident rate from 2.51 to 1.80. There were no fatal air cargo accidents in 1969 compared with one in 1968 which claimed two lives.

Frank J. Clifford



* The radical drop in the accident rate from 1967 to 1968 must take into consideration the changed definition of a reportable accident effective in 1968.

Left—new control tower at Tweed-New Haven airport was purchased by the State and community and equipped and staffed by FAA.

Top, right—Chief Controller Walter Powell (right) talks with Airport Manager James Malarky before symbolic sculpture of "Flight."

Bottom, right — new tower has stimulated general aviation and air carrier use of airport.

do it yourself Airport

A 39-year-old Connecticut airport that was once considered to be too small and ill-equipped to keep pace with the jet age has been given a new lease on life with the commissioning of a 16-hour-a-day FAA air traffic control tower financed jointly by the local municipality and the Federal Government.

Because of the new tower, Tweed-New Haven Municipal Airport will soon be enjoying regular jet air carrier service as well as safer, more extensive general aviation operations. The story behind the upgrading of this all-purpose airport is a fine example of how local interest and determination can insure the future of aviation within a community.

The story began on June 21, 1967, when the Federal Aviation Administrator received an unusual letter from Robert N. Giaimo, Member of Congress from the Third Connecticut Congressional District, which includes New Haven County. Congressman Giaimo proposed that the City of New Haven would finance and construct a VFR tower cab at the airport terminal building according to FAA specifications—provided that FAA would agree to equip the tower with appropriate electronics gear and maintain and man it with regular air traffic service personnel.

The offer was unexpected—especially in view of the fact that traffic forecasts indicated Tweed-New Haven would be eligible for an FAA-built control tower by 1969 (on the basis of over 50,000 itinerant operations annually) and FAA was already planning to request authorization of the tower in its 1969 budget request.

However, New Haven airport officials had an air traffic problem on their hands that called for quick action. Local air traffic was increasing at such a rapid pace that the day was not far off when it could conflict with air carrier operations. In the absence of a control tower, these operations could be diverted to Bridgeport or other New England airports with controlled traffic. (Their worries were well-founded: in the following year Eastern Air Lines, one of the two air carriers serving New Haven and the only provider of jet service, suspended operations following several incidents in the traffic pattern that convinced Eastern's pilots a hazardous situation existed.)

That is why concerned officials and citizens of New Haven, under the leadership of Congressman Giaimo, were willing to build a control tower with city funds rather than wait for Congressional authorization and funding, which might delay actual use of a tower until well into the 70s.

Their offer was promptly accepted. New Haven Mayor Richard C. Lee and the Board of Airport Commissioners, supported by Airport Manager James E. Malarky and the Chamber of Commerce airport Committee persuaded the City Council and the State of Connecticut to provide the necessary funds—eventually totaling $180,000. Construction of a modern terminal building proceeded at the same time.

On a quiet Sunday morning in March, 1969, a flat-bed trailer truck bore a 16-ton prefabricated steel tower cab down the center of New Haven and delivered it to the airport. The pentagonal tower, with its 360 degree view, was installed atop the new terminal building.

On December 1, 1969, the new control tower was formally commissioned by Federal Aviation Administrator John H. Shaffer, who predicted that Tweed-New Haven might well develop into a vital feeder airport for the Boston or New York metropolitan areas. Plans were also disclosed to install a VASI (visual approach slope indicator) and instrument landing system components in the near future.

Responsibility for the new tower was turned over to Walter Powell, a veteran FAA controller with 21 years of air traffic experience.

On the basis of the first month's tower operation at New Haven, Powell estimates that the airport will log close to 170,000 operations in 1970, and that traffic will continue to grow rapidly. The presence of a control tower has prompted Eastern Air Lines to schedule the restoration of jet air carrier service to New Haven in April. The airport is also served by Allegheny Airlines and Pilgrim Air Service.

New Haven Airways, the fixed base operator, believes that many more corporate aircraft will use the airport, now that they will not have to contend with an uncontrolled mixture of low and high speed aircraft in the traffic pattern. Seventy-five aircraft are presently based on the airfield, and several dozen local business firms regularly transport personnel and supplies to New Haven in their own aircraft.

City officials and prominent businessmen have faith in the future of flight and believe that no modern city could keep pace with the economic growth of the times without a thriving airport. Although the city has excellent rail services, city fathers were determined that the air freight and passenger service originating in their area would use their own airport.

Their determination resulted in the acquisition of a TVOR (Terminal Low Power Omni-Range) at their own expense in 1962 and a control tower in 1969—both now maintained by FAA. Their belief in the adage that the Federal Government helps those who help themselves has given them a strong boost into the Age of Aviation. ■

Down But N

Top—cloud-covered Maui Island with its mountainous terr ing in blinding downpour. **Left**—polar bear hunt in Arct flyers. Disabled aircraft were located ingeniously by FSS S Hurricane Gladys indicates weather conditions controllers

Five air travelers are alive and well today despite a trio of misadventures which could have ended in tragedy except for the alertness and concern of four FAA air traffic control specialists whose rescue efforts have earned them the Department of Transportation's Special Service Award. The awards, plus a check for $400 each, were presented by Secretary of Transportation John A. Volpe at a recent ceremony in Washington, D.C., honoring outstanding flight assists of 1968. The three incidents took place in Hawaii, Alaska and Florida.

Kahului, Maui, Hawaii. On November 29, the work day began at midnight for controller Mandel Moskow in the combined station/tower. It was a wet, dark, depressing night for solitary duty, with no known traffic in the area. Driving rain and low ceilings made the Kahului Airport uninviting even to birds.

After three hours of monitoring the guard channel, Moskow abruptly found himself listening to the distress calls of a twin Beech BE-18 seeking aid from the Honolulu Center. Nearly 18 hours out of San Francisco, the BE-18 had lost the use of its LORAN some 200 miles northeast of Honolulu. A Coast Guard C-130 was dispatched to intercept the Beech and shepherd it, by means of airborne radar and DF, to the airport at Kahului.

Mindful of the heavy downpour and its derogating effect on radar, the solitary controller followed the approach of the BE-18 closely on his DF scope. (To the east of Kahului Airport lies 10,000-foot Mt. Kahului; to the west lie the 6,000-foot Maui peaks.)

Observing the BE-18 move away from the airport toward the western mountains, Controller Moskow informed the Coast Guard of the hazard and took over responsibility for assisting the distressed aircraft. Using his (Doppler) Direction Finder, he vectored the BE-18 directly over the airport at an altitude of 5,000 feet.

With the constant guidance of the controller, the BE-18 pilot executed a VOR approach, broke out of the clouds at about 800 feet and was able to touch down on Runway 02.

But the ordeal was not over. Because of the continuing heavy rains which obscured his visibility, and the strong gusty crosswinds (over 30 knots), the pilot was unable to control the landing. After several wild bounces he decided to abort.

Realizing the difficulty of landing the tailwheel aircraft under existing conditions, and ascertaining that 2½ hours of fuel remained, Controller Moskow advised the pilot to proceed under Coast Guard escort to Honolulu, where better landing facilities were available. However, when the pilot reported an overheating engine and airspeed indicator failure, it was determined to try again to land at Kahului.

This time Moskow provided DF guidance to the BE-18 down to 700 feet for a straight-in approach. The aircraft drifted slightly west of the airport and for a few tense moments the pilot was unable to pick up the field lighting. Moskow vectored the BE-18 carefully back on course, and the pilot managed to bring the aircraft down on the runway for a safe landing. The torrential rain was so overwhelming that the aircraft had to be guided to the ramp by a fire truck.

The pilot and his wife, two missionaries en route to the Trust Territories in the South Pacific, came up to the tower to thank Moskow for his assistance. They acknowledged that an 18-hour stint in bad weather over open water, with a single pilot, is leaning heavily on faith. They also acknowledged that their safe arrival was a joint effort on the part "of the Coast Guard, FAA, and the Lord above." ■

Hawaii-stationed award winner Mandel Moskow used a Doppler DF to obtain a bearing on the lost BE-18 pilot he steered to safety after 18 hour flight over ocean.

Kotzebue, Alaska. Hunting polar bears with aircraft over the Arctic Ocean is always considered a dangerous game by the professionals, but for three amateur hunters who strayed near the International Dateline and landed on the frozen Chukchi Sea in their quest for the hide of *Ursus maritimus*, the ingenuity of an FAA air traffic control specialist spelled the difference between early rescue and possible abandonment.

The three hunters left Kotzebue, which lies just north of the Arctic Circle on the western edge of Alaska, at daybreak on April 16. As customary they took two airplanes, a Piper 18 Supercub and a Cessna 180, equipped with ski landing gear. Their quest for the great white bear drew them westward beyond their intended range. Finally, a bear was sighted on the ice, and the lone hunter in the Supercub swooped down for a landing. In his eagerness he damaged his landing gear beyond immediate repair. Undaunted, he pursued the bear and shot it, while the second plane made a cautious landing.

With three men and a bearskin on board, plus hunting and survival gear, the Cessna lumbered heavily over the rough ice on takeoff and was forced to abort after one ski struck an ice outcrop. Examination showed that the ski was damaged beyond their capacity to repair. They were stranded on the ice.

Although the radios in both aircraft were operating, once down on the ice the hunters found that Kotzebue Flight Service Station, some 300 miles to the east, was virtually out of their transmitting range. They settled down for a gloomy night of waiting, as the temperature dropped far below zero and the unobstructed wind howled across the Arctic wastes.

Meanwhile, back at Kotzebue, specialists at the FSS alerted all search and rescue units that the bear hunters were overdue on their flight plan. All efforts to contact them by radio had failed when specialist Edward Ward came on duty at 8 p.m. Ward fell back on an old radioman's trick he had acquired in 40 years of radio communications.

Ward arranged for a "beat frequency

t Not Out

ntainous terrain, where missionary pilot made emergency land-
unt in Arctic Circle might have ended in disaster for three
sly by FSS Specialist Edward Ward. **Right**—wreckage left by
controllers faced during height of storm.

Key West, Fla. When hurricane warnings are posted along the Florida Keys, there is an immediate migration of aircraft to safe haven on the mainland. Even the hangared aircraft of the U.S. Navy at Key West are flown north, and the empty hangars are made available as shelters for smaller private aircraft which cannot be evacuated. Attempting to reach the sanctuary of the hangars at Key West Naval Air Station nearly cost the life of a pilot attempting a VFR ferry flight in marginal weather during the 1968 hurricane season.

On October 15, the flight service station at Key West was a busy place, with extra air traffic control specialists assisting the hundreds of pilots attempting to move aircraft out of the reach of Hurricane Gladys.

Late in the afternoon Specialist Henry Till picked up a Mayday call from the pilot of a Cessna 150 en route to Navy Key West from Marathon, 42 miles to the east, normally a flight of 20 minutes. The pilot, VFR qualified only, was trying to remain under the weather, flying between 500 and 1,500 feet. At that altitude he had difficulty receiving the Key West VOR and had drifted off course, to the north of Key West. The sun was starting to go down and the sky was already darkening as rain squalls chased the small plane over the rough sea. Fearful of ditching or being blown out in the Gulf, the pilot was nearly in a panic.

Supervisor (now FSS Chief) James Holyfield and Till established the Cessna's position with their Direction Finding equipment and gave him a heading for Key West. Because of the pilot's distressed condition, it was necessary to coach him continuously, checking his airspeed, aircraft attitude and heading. The turbulent air pitched the light plane about mercilessly.

The calm, reassuring voices of Holyfield and Till coaxed the pilot to climb to an altitude of 2,700 feet, where the DF equipment could obtain a clearer fix on his progress. However, the pilot soon reported that he was encountering heavy rain and strong up and down drafts, which made it impossible for him to maintain altitude, and that his airspeed indicator was past the red line. He was advised that he was probably in a dive and that he should immediately check his rate of climb/descent indicator. His readout confirmed that he was in fact diving sharply.

Convinced that he was going into the water, the pilot called for a rescue boat. He was reassured and advised calmly but insistently to retard the throttle and begin back pressure on the control wheel. He was able to level out the aircraft, and was praised by the two FAA men for his recovery of control.

Now flying close to the water at just over 500 feet, the aircraft could not be picked up by Key West naval radar. The pilot could not make out any landfall or lighting. He was requested to climb to a higher altitude, maintaining VFR, if possible, on a heading of 155 degrees. The increasing wind velocity made it difficult for him to hold this course; moreover, he felt certain that he had overflown Key West and was now south of the airport, so he altered his course to a northerly heading of 10 degrees.

At this point the Naval Air Station launched a rescue helicopter toward their DF bearing on the lost aircraft. Holyfield and Till continued to persuade the pilot that he was still north of the airport, to maintain a southerly heading, and watch for lights. They advised him that the runway lights at Key West International Airport would be flicked on and off, and asked him to look straight ahead while holding a heading of 160 degrees.

At 8:15 p.m., over an hour after the FSS had first picked up his distress call, the pilot called out excitedly, "Yes! I have the runway lights in sight!" The weary pilot made a safe landing at the Naval Air Station and hangared his aircraft.

Lewis Gelfan

Key West award winners James Holyfield (standing) and Henry Till with equipment used in assisting a pilot caught in the hurricane.

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oscillator" to be set up to augment the signal he had been listening for in vain. He then transmitted signals "in the blind" to the downed flyers on a high frequency transmitter commonly used in Alaska for long-range communications.

Hours of patient transmitting and listening followed, with no response—and no sign of life. Ward tried again when he came on duty again the following evening—knowing that changing atmospheric conditions could affect his reception. His persistence was rewarded at 8:50 p.m., when a weak signal barely audible and not readable, was heard.

Edward Ward, Alaska flight assist award winner, holds his Special Service Award and a $400 check presented to him by Secretary Volpe in Washington, December 11. Ward located two crashed aircraft through unusual radio techniques.

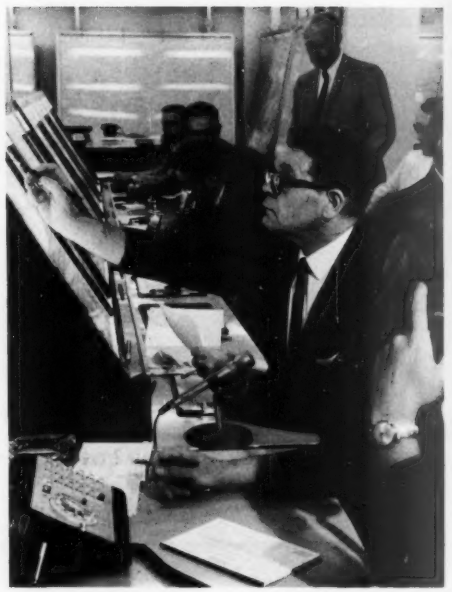
"If you read me, key your mike three times," Ward radioed. He listened, and could just make out three scratchy bursts of static. Continuing to interrogate in this manner, he determined to his own satisfaction that he was in fact in contact with the lost bear hunters, that they were alive and well, and that their location was well beyond the area now being scanned by search planes.

Ward radioed his information to the search and rescue units, who then extended their operations further west to the International Dateline the next morning. Before noon the shivering hunters were located, bundled aboard two P-18s and headed back to Kotzebue none the worse for their ordeal. Adequate survival gear, plus the bearskin, had protected them from the rigors of the Arctic night, but until Ed Ward's improvised communications system had made contact they had been three nervous Nimrods.

If they go bear hunting again, they are likely to follow Ed's advice and establish radio contact before they trust their aircraft to a strange ice floe. ■

Reservations, Please

Flight reservation system at five busiest airports succeeds in reducing delays



Above—Reservations are entered on a first come-first served basis, 24-hours-a-day, 7-days-a-week. **Right**—Colored squares on panel's right side tell the operator the reservation status at ORD (O'Hare).

Success of the "Flight Reservations" rule in reducing delays at the five busiest major airports in the United States has prompted FAA to extend the procedure until October 25, 1970. The rule was initially instituted on June 1, 1969, for the duration of the 1969 calendar year.

Analysis of recent operations at Chicago O'Hare, Washington National, Newark, LaGuardia and John F. Kennedy airports indicates that air travelers have benefited substantially from the reservations system, which requires all aircraft planning to use one of these airports to be cleared in advance through FAA's Air Traffic Service.

Over the six-month period—June 1 through November 30, 1969—delays of all aircraft departing or arriving at the big five airports were down 28 percent over the same period in 1968, while aircraft operations fell off only four percent. A reduction in general aviation operations at some of these airports was compensated for in large measure by increased activity at smaller airports in the same vicinity.

Washington National Airport reported a decrease in general aviation operations of 1.7 percent for the first six months of the flight reservations rule. At nearby Dulles International Airport, however, an increase of over 23 percent was logged.

At John F. Kennedy Airport in New York, where private flying fell off sharply during the summer, recent months have shown a reversal of this trend. At Newark and LaGuardia, a marked reduction in general aviation activity has been balanced by a solid increase at the four other tower-controlled airports in the area: Teterboro, Morristown, Westchester and MacArthur. Itinerant flying at these airports from June 1 to November 30, 1969, rose by 5.1 percent.

The migration of light planes to the smaller airports is motivated in part by a desire to avoid the $25 minimum landing fee now in effect at busy hours at Newark, LaGuardia and JFK. An estimated 70 aircraft owners and business firms are seeking space at Teterboro Municipal, where the management is rushing construction of 19 hangars and a terminal building.

At Chicago O'Hare, the world's busiest major airport, general aviation activity dropped off by about 33 percent under the flight reservation system, although other factors such as relatively high landing fees and the closure of three runways for construction work contributed to the reduction. A healthy rise in private flying has taken place at smaller nearby airports. Pal-Waukee, (10 miles northwest of Chicago) for example has recently increased fueling capacity, added fuel trucks, car rental service and a motel and restaurant.

Flight reservations at the five high density airports are controlled by the Airport Reservation Office, located at FAA Headquarters in Washington, D.C. Hourly quotas for IFR operations remain unchanged under the extended rule. They are:

Washington National—60 (40 air carrier, 8 air taxi, 12 other);

Chicago O'Hare—135 (115 air carrier, 10 air taxi, 10 other);

Newark—60 (40 air carrier, 10 air taxi, 10 other);

LaGuardia—60 (48 air carrier, 6 air taxi, 6 other);

Kennedy—5 to 8 p.m. peak—90 (80 air carrier, 5 air taxi, 5 other). Other hours—80 (70 air carrier, 5 air taxi, 5 other).

Also continued is the provision which permits additional operations at all five airports, in excess of the established quotas, when weather and other conditions permit. These additional operations may be either IFR or VFR.

Some procedural changes are being made to accommodate general aviation pilots in making reservations. The 48 hour lead time for securing IFR reservations will be extended and extra time for securing reservations in advance of holidays will be provided.

In addition, the procedures for obtaining VFR reservations will be simplified. Pilots approaching one of the high density airports will contact only the normal approach control facilities for reservation and clearance to land. Previously, they had to go through the local flight service station to obtain a reservation before contacting air traffic control.

The rule extension is based on a Notice of Proposed Rule Making (Notice 69-51) issued on November 15, 1969.

Prior to the regulation, arrivals and de-

partures during busy hours frequently swamped the airports' capacity, leading to aggravating, expensive delays while scores of aircraft orbited in "stacks" awaiting landing clearances.

Advance reservation of space for air carriers, scheduled air taxis, and general aviation aircraft had the practical effect of smoothing out the peaks. Instead of great numbers of aircraft converging on the high density airports during the late afternoon and early evening hours, a fairly uniform stream of air traffic was maintained throughout the day. Delays were minimized, as fuller utilization of airspace and ground space benefited all phases of aviation. Interestingly, it has been a rare day when a general aviation pilot has been unable to reserve an arrival or departure operation when desired.

By regulating the numbers and times of arrivals and departures, the margin of air safety in the terminal area is broadened. Because all arrivals and departures are anticipated and provided for, there are few, if any, "unkowns" scooting through the airspace around the five high density airports.

The contribution of the flight reservation system to reduced delays was demonstrated dramatically last Thanksgiving day, *when no scheduled commercial flights in the United States were delayed by air traffic control more than 30 minutes.* This is a much brighter picture than that of Thanksgiving 1968, when 407 aircraft were delayed for more than 30 minutes.

The Airport Reservation Office is a seven-day-a-week, 24-hour-a-day control center on the sixth floor of FAA Headquarters. In a room wallpapered with blanket-sized maps, special backlighted reservation boards (one for each of the five airports) glow in a row, each with a multi-line phone and an operator before it. The actual reservations are made in grease pencil directly on the plastic face of the boards where they can be read at a glance by the air traffic control specialists who handle 500 phone calls and 150 teletype requests a day.

The office limits its services to designating the hour within which aircraft on IFR flight plans may depart from or arrive at the airport. Pilots flying VFR are by no means barred from using the "big five" airports, but are advised to plan for an alternate arrival airport just in case poor weather or other reasons (such as significantly heavy VFR traffic) limit operating capacity.

IFR pilots seeking arrival or departure reservations can call the Airport Reservation Office directly over special phone lines installed for this purpose, or through regular long-distance dialing, or by teletype from any FSS. The first two choices have the advantage of direct negotiation with an air traffic specialist who can give an up-to-the-minute picture of reservation spaces available. While there is no guarantee of matching exactly the desired time of arrival or departure, direct conversation generally results in a satisfactory compromise.

By dialing any of the following local numbers, general aviation pilots planning an IFR arrival at or departure from any of the five high density airports will be connected directly with the ARO in Washington, D.C.:

Newark, N.J.	201	645-4370
New York, N.Y.	212	656-4177
Chicago, Ill.	312	372-5215
Washington, D.C.	202	963-5161

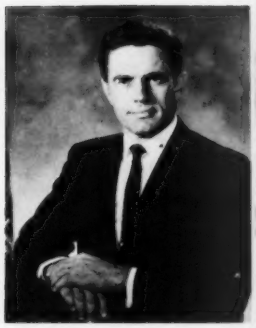
If the IFR general aviation pilot phones or visits an FSS for a reservation, he can expect a delay of from 30 to 60 minutes because the request is normally transmitted to Washington via teletype. In unusual cases, the FSS might speed the process by using its leased telephone line.

In any event, all requests are handled on a first-come, first-served basis. Flight reservations must be made within 48 hours of the flight, except for Mondays and Tuesdays, for which reservations can be made after 6 a.m. Friday. During holiday periods, the special times and dates in effect for filing can be found in the "Airman's Information Manual."

While some general aviation pilots shied away from using the reservations system at first, on the misconception that it was designed to make life difficult for them, recent months have seen an increased appreciation on the part of all pilots for the orderly and dependable traffic flow that controlled usage makes possible at airports formerly saturated at peak hours. ■

Famous

FLIGHTS



Dr. Karl G. Henize, Astronaut/Astronomer

A pilot who won his wings at 42. Henize regularly flies Mach 1.5 T-38. **Above**—Astronaut Henize relaxes by flying Beech "Bonanza." **Left**—Like other astronauts, Henize is a skilled Scuba diver. Underwater work helps familiarize astronauts with near weightlessness they will find in space explorations.

ASTRONOMER IN SPACE

From a vantage point some 250 miles above the earth a scientist-astronaut will sit at the complex control panel of an orbiting solar observatory and begin the awesome task of unraveling mysteries surrounding the radiation of X-rays and the other high energy emanations from the source of nearly all earthly energy—the sun. In between observations he will take his turn at piloting his manned space orbiting laboratory. The year will probably be 1972 and the observor may be Dr. Karl G. Henize, a renowned astronomer turned astronaut, who had passed his 40th birthday before he so much as sat in the left-hand seat of an airplane cockpit.

The question of whether a civilian scientist with no aviation experience whatever could be assimilated into the astronaut program was answered with a loud "Yes!" by Dr. Henize. Although astronauts are commonly viewed as "supermen" by the public, from Henize's viewpoint the basic requirements are similar to those which make a successful pilot—the ability to maintain constant vigilance and to react without panic to inflight emergencies.

Other qualities that count heavily for Dr. Henize are a sense of adventure and a driving desire to "get into difficult-to-reach places." (His hobbies are revealing: mountain climbing, skin diving, and cave exploration.) His interest in the astronaut program began with his efforts to obtain photographs of distant stars with a camera placed on board unmanned space vehicles of NASA's *Gemini* program. Successful photographs were obtained but they only served to whet Henize's desire to get into space himself as the operator of bigger and better space telescopes. The fact that he had no piloting experience, and would have to complete a strenuous 53-week Air Force jet pilot training course (that washes out many trainees half his age) before he could qualify as an astronaut, gave him no concern.

His first solo hop, after 10 hours in a T-41 (Cessna 172), was exhilarating rather than frightening. It was a short flight, but it was also the first stage of a program that would equip him to surmount the atmosphere of the earth and carry out astronomical observations from that highly desirable vantage point. Fifty weeks and 240 flight hours later, he was fully qualified in the T-38, an Air Force jet with a top speed of Mach 1.5. He now logs about 20 hours a month on his own in the T-38 to maintain currency, and flies a club Bonanza for fun and convenience.

Although he had passed his 42nd birthday by the time he completed his flight training, Dr. Henize experienced no difficulty with any phase of it. The nearest thing to an "incident" occurred during a night training flight, which was proceeding beautifully until he discovered that his gyro compass was not functioning. A typical astronomer, he first detected the problem by noting that his gyro heading did not correspond to what the constellations were telling him. This and other training experience led him to develop a flight motto: "When everything seems to be going smoothly, check everything again."

His recreational flying in the Bonanza has provided him with experiences that may prove valuable in space. Last May, for example, he committed himself to flying his family from Houston to Cape Kennedy for the Apollo 10 moonshot, only to find the weather solid IFR virtually all along his route. With turbulent air bouncing the light aircraft about, rain lashing at the windows, and a concerned wife and children at his side, Dr. Henize discovered that flying light planes in IFR conditions may be considerably more nerve-wracking than IFR work in the higher-flying, better instrumented T-38s. He completed the flight on schedule, with a sense of being better prepared as an astronaut to encounter the unexpected—such as the lightning bolts that apparently struck the Apollo 12 spaceship shortly after takeoff.

Karl Henize first developed his astronautical *wanderlust* as a boy, growing up in the Ohio farm country west of Cincinnati. The long, star-filled winter nights ignited his sense of mystery and exploration. As a high school freshman he persuaded a local optical house to grind him a lens with a six-foot focal depth at a bargain price of $3. With a homemade ring mount and eyepiece, he managed to bring the planet Saturn with its shining rings into view—an exciting triumph!

Henize studied mathematics and astronomy at the University of Virginia and received his PhD in astronomy from the

University of Michigan in 1954. His next two years were spent at the Mt. Wilson Observatory in Pasadena, Calif., conducting spectroscopic and photometric studies of emission-line stars and nebulae. His special interest lies far beyond the solar system in the galaxy of stars and nebulae of which our sun is only one star among a total of 200 billion. In the incredibly distant reaches of our galaxy, stars are constantly being born from gigantic clouds of dust and gas while other stars, having completed their evolutionary cycle, are dying. Many mysteries still exist as to how these processes take place and Henize and his astronomer colleagues explore the galaxies for special stars and statistical data which may shed light on these mysteries.

His work in ultra-violet optical systems eventually brought him into contact with the manned space flight program as a supervisor of ultraviolet stellar spectroscopy in *Gemini* and *Apollo* flights.

In 1967, Dr. Henize was one of 11 scientists selected for astronaut training from a field of over 900 applicants. He received academic training as well as flight training as an astronaut and his present duties involve assisting in current space missions as well as preparing for the launch of a manned orbiting space laboratory, tentatively scheduled for 1972.

On board that flying laboratory will be a battery of six solar telescopes whose data will extend human understanding of the complex effects solar radiation has on our planet Earth. The crew will consist of both pilot-astronauts and scientist-astronauts, all capable of flying a craft with a top speed of nearly 20,000 mph. At least one of them will be an astronomer, and Dr. Karl Henize hopes it will be he. No one can say he is not prepared. ■

Artist's conception of a three-deck space station manned by a 12-man crew to be placed in orbit around the earth and later in orbit around another planet—possibly Mars.

BRIEFS

■ DULLES INTERNATIONAL AIRPORT is now off-limits for student pilots, following an FAA Rule effective Dec. 4, 1969 that no one may take off or land a civil aircraft at IAD who does not hold at least a private pilot's certificate. The prohibition applies even when a student pilot has a certificated flight instructor or other appropriately rated pilot aboard. Private pilots will be permitted to take instruction at Dulles leading to advanced ratings and licenses such as multi-engine, IFR, commercial, ATR, etc. In view of increasing traffic (217,114 operations in FY 1969, an increase of 12 percent over FY 1967) continued operation of aircraft by persons holding only student pilot certificates could adversely affect air safety at the large jetport.

■ BANNING THE BOOM. The United States Government is determined to insure that no unacceptable situation for the public will be created by sonic boom. Considerable research, unilaterally and in collaboration with other interested governments, is being conducted to determine the responses of people, structures and ecology to sonic boom. The Government will prohibit civil supersonic transport operations which deliver audible sonic booms to the populace on the ground until such time as technology makes possible the attenuation of the sonic boom to levels acceptable to the public. The Government is hopeful that advances in technology will eventually make unnecessary any such restriction.

■ TURBOPROP AIR TAXIS with gross takeoff weight up to 27,000 pounds, and with a maximum capacity of 12 passengers, are now eligible to carry mail. The more liberal limitations, which previously had been pegged at 12,500 pounds, followed an amendment of CAB regulations in late December.

■ SECRETARY OF TRANSPORTATION John A. Volpe and FAA Administrator John H. Shaffer will speak at the opening session of the second annual National Aviation System Planning Review Conference in Washington April 14-17. The annual event brings top-level government and aviation industry leaders together to discuss present and future U. S. aviation requirements. Registration must be in writing and addressed to: Office of Public Affairs (PA-30). FAA, 800 Independence Ave., S. W. Washington, D. C. 20590. Last year's conference was attended by more than 1,000, representing some 250 companies.

■ WORLD'S FIRST ALL-PLASTIC AIRCRAFT, the Windecker "Eagle," received FAA type certification recently. The sleek low-wing, four-place craft is made of moulded fiberglas and epoxy resins, a procedure that provides high strength with light weight. The "Eagle" has retractable tricycle landing gear and is powered by a 285 hp Continental which gives it a normal operating speed of 190 mph, red line speed of 234 mph and a range of 1,000 miles plus. Gross weight is 3,300 lbs.

RULE CHANGES SHOULD SPUR SIMULATOR TRAINING

Greater use of FAA-approved airplane simulators is now permitted and encouraged by regulatory changes to airline training and crew certification requirements. The revisions have been put into effect to take advantage of advanced flight simulation technology in preparing crews for the new, faster, high-capacity transports that will be entering passenger service in the early seventies.

Simulator time can now be used in combination with actual flight time for training and certificating of crew members, for flight testing pilots, and for conducting periodic pilot proficiency checks. Qualification and certification of airline flight instructors and check pilots are also affected by the rule changes.

The new rules establish a two-step procedure to obtain FAA approval of airline training programs. Only tentative approval will be granted initially, with final approval withheld until the agency has completed its evaluation of program effectiveness. Formerly, approval could be granted before actual training was conducted.

While programmed hours of flight training are specified for the particular airplane, each individual flight crewmember may be trained and checked to a predetermined level of proficiency in less than the programmed hours through the combined use of actual flight in the airplane and in an approved airplane simulator. The proficiency level must be attained for specific flight maneuvers, procedures and functions.

Under the new rules, FAA will approve the use of simulators on an individual basis for each required flight maneuver and procedure as well as for specific airplanes and air carriers.

Advanced simulators which duplicate cockpit environment in realistic flight conditions are expected to play a greater role in air crew training under FAA regulation changes.

The increased use of simulators follows extensive FAA analysis of such devices, which concluded that simulators can provide advantages that airplanes lack. Sitting in a cabin mock-up with operable controls and with a realistically simulated flight environment (through films) a pilot can observe and correct his mistakes in maneuvers such as engine out or low approaches without actual exposure to potentially hazardous conditions. Simulators also help ease the serious problem of congestion in the airspace by permitting more flight training to be simulated on the ground.

The new rules, based on Notice No. 69-14, issued April 14, 1969, went into effect on February 2, 1970.

AIRBORNE LITTER. An FAA-certificated Enstrom Corporation helicopter with external litters is currently in use in search and rescue operations. The helicopter, which is capable of asymetrical litter loading, can also be used for rescuing stranded or injured skiers from mountain tops.

Stronger Safety Belt Regulation Proposed for General Aviation

All passengers over the age of two flying in general aviation aircraft will be required to fasten their safety belts during takeoffs and landings under a new rule proposed by FAA. Infants under the age of two may be held by an adult. Present rules for general aviation provide only that aircraft be *equipped* with safety belts for all occupants.

If adopted, the new rule would require general aviation crew and passengers to abide by the same safety belt regulations long in force on air carrier aircraft of all kinds.

For purposes of clarity, a person over the age of two means anyone who has reached his second birthday.

Comments on the proposed rule (Notice No. 69-55; Docket 10037) should be submitted in duplicate to FAA, GC-24, 800 Independence Ave., S.W., Washington, D.C. 20590 before March 31.

FAA Testing New Procedures For Reporting Weather Hazards

The Federal Aviation Administration and the Weather Bureau are conducting a six-month test on new procedures for issuing hazardous weather warnings.

In certain areas, during a six-month period ending on May 1, hazardous weather warnings in the form of SIGMETs and AIRMETs are being broadcast *only if there is a change in the forecast.*

The standard practice has been to follow up initial warnings of such weather hazards as thunderstorms, fog or hail with SIGMETs (Significant Meteorological Information affecting all aircraft) or AIRMETs (Airman's Meteorological Information affecting light aircraft in particular), provided by the Weather Bureau. SIGMETs are broadcast every 15 minutes for the first hour; AIRMETs are broadcast every half hour for the first hour. An alert announcement is then broadcast every half hour for the duration of the advisory.

In spite of these repeated warnings, the National Safety Transportation Board reports that flying into hazardous weather conditions, which the pilot cannot handle, continues to be a primary cause of general aviation accidents. Consideration has been given to the possibility that some pilots condition themselves to disregard weather warnings because of their repetition.

In the test areas pilots still receive area/terminal forecasts, pilot reports, radar reports, and current weather observations as well as SIGMETs and AIRMETs when filing a flight plan. They also receive updated weather information from the VORs at quarter past the hour while in flight. However, inflight they receive only *solicited* weather information or a SIGMET or AIRMET which revises the original weather forecast and briefing provided by the Flight Service Station.

This procedure cuts down on the volume of information carried over the radio and theoretically draws more attention to hazardous weather warnings because of their infrequency.

Test areas include: FAA's Eastern and Central Regions, except Montana; and Wyoming, Colorado and eastern North Carolina.

Fail Safe Communications

FAA has contracted with International Telephone and Telegraph Corp. for 285 transceivers and accessory equipment for emergency backup of the communication systems at air route traffic control centers.

Once the backup is installed, an air traffic controller who loses communications with an aircraft because of a systems failure need only push a button, and within two or three seconds communication will be restored on the correct channel automatically.

FORUM

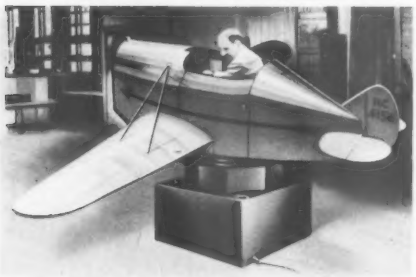
• Army Airmail Pilots

"Ed Link's Plywood Pilot Maker" in the November 1969 FAA AVIATION NEWS was interesting but misstates the facts in saying that "only two out of 200 Air Corps pilots chosen to fly the mail had over 50 hours of flying time."

Every Air Corps pilot logged about 275 hours going through flying school. In addition, almost all of these pilots had one or more years active duty since graduation. It is true that few were accomplished instrument pilots but even in 1930 all members of my class at Kelly Field had a few hours of hood time.

The worst problem was the lack of proper equipment. The mail was carried in all types of aircraft, including Boeing P-12 pursuit planes and Curtiss B-2 bombers. These aircraft had primary panels only, and little or no anti-ice or deicing equipment.

Cornelius K. Dunbar
Los Altos, Calif.



The line cited should have read "Only two out of 200 Air Corps pilots chosen to fly the mail had over 50 hours of instrument *time.*

• Airport Closing

A fixed base operator recently said that he could close the airfield he was operating from and the entire area for up to 30 minutes for an ambulance flight.

Where in the regulations is such a situation covered, and how is it accomplished? What if an airplane without a radio came into such an area? Is the field "Xed" off?

Eureka, Calif.

If the airport is receiving Federal aid under the Federal Airport Act, the airport sponsor must give assurance that the airport "will be available for public use on fair and reasonable terms and without unjust discrimination." The right of a fixed base operator to act for the airport owner depends on whether he is the owner's agent for such action.

As for "clearing the area," only the FAA may restrict the use of airspace in the vicinity of an airport. No Federal Aviation Regulation currently restricts the use of an airport or airspace merely because of an ambulance flight.

When an airport is restricted by its owner, it may be marked by an "X" as specified in Advisory Circular 150/5340-7, and as also discussed in Part 1 of the AIM. Landing at a marked airport is not specifically prohibited by the FARs but it is possible that such operation may create hazards covered by regulations such as FAR 91.9 "Careless or Reckless Operation."

• Listen for the Dial Tone

As a pilot and music teacher I'd like to propose an idea that might have flight safety value. The number of music scales is almost infinite, and therein lies a possible way to identify aircraft.

A device could be constructed so that when a transponder responds to a radar signal an electronic strip with a series of tones installed in the aircraft could be "recognized" by a computer. These tones would be transmitted in a series of electrical impulses which would be translated into sound.

The scales are so immense in number that one scale could be given to each member of the human race since time began and there would be many left over. These scales could be assigned to each aircraft and would become effective identifying symbols.

Musician

The use of varying tones that could be computerized for aircraft identity is quite similar to the transponder discrete codes FAA will be using in the new automated air traffic control system. The present Air Traffic Control Radar Beacon System in use now relies on 64 different codes (like tones) to identify aircraft. As FAA's new computers and display system are installed over the next few years, there will be 4,096 different codes for more individualized identification of transponder-equipped aircraft. These should be sufficient to handle the volume of air traffic. If not, the beacon system has expansion capability to 16,384 different codes.

• Skirting the Issue

I am a woman pilot, currently living in Korea. I understand there is an organization called the "International Women's Pilot Association." Can you give me its address?

Mrs. June Ulicny
Seoul, Korea

Perhaps you mean the "Women's International Association of Aeronautics," 1010 Dorchester Road, Brooklyn, N.Y. 11218. Another feminine pilot organization is the "Ninety-Nines, Inc." Will Rogers/World Airport, Will Rogers Station, Oklahoma City, Okla. 73159.

• Painting the Wind

I have an idea about wake tubulence which I have never seen presented before. Simply: when large aircraft takeoff or land there is no visible sign of wake turbulence. To make this turbulence visible why not have large aircraft emit a colored gas, powder, or substance that will dissipate when the turbulence becomes minimal? A small jet for such emission could be placed near the trailing edge of the wing.

Charles M. Gacsi
Montclair, Calif.

FAA has studied various types of emissions but all have unacceptable limitations. The most successful medium used in tests was the jettisoning of colored fuel. However, this was shown to be inadequate for outlining vortices at sufficient range and time to be effective. Also, there would be added weight and cost, plus the danger of fire and explosion associated with the emission of volatile fuel. In addition, emissions of any kind would add to the air pollution problem.

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but names will be withheld on request.

• Hose of a Different Color

More than once aircraft in our flying club have been serviced with the wrong grade of fuel. The man doing the refueling got his hoses mixed up.

Wouldn't it be sensible to have one hose green and the other hose red? Wouldn't it also be sensible to have the aircraft's gas caps in the proper color?

We now have embossed sticky-back labels in the proper color with the wording "Use only 100 octane etc." placed adjacent to the aircraft's gas caps.

S. R. Eddy
W. Hartford, Conn.

Your idea is reasonable—but many operators dispense fuel of different octane rating from one hose; it is simply a matter of switching fuel supply tanks. This is especially true in the case of mobile fuelers wherein the truck carries perhaps three grades of fuel valved into one dispensing hose.

The best safeguard is actually seeing the color of the fuel itself. It is a good idea to personally supervise the refueling operation.

Aviation gasoline is coded: 80/87—red; 91/98—blue; 100/130—green; 115/145—purple.

The embossed labels you mentioned are commendable but continuous supervision and education of refueling crews is necessary. Also, at night and under poor light such color coding cannot be relied upon.

FAA requires that the minimum grade of fuel be marked on or near the fuel filler cap on all airplanes.

• Face to Face with IFR

A large number of accidents happen when a non-IFR rated pilot flies into marginal VFR or solid IFR conditions. These pilots apparently have no fear of what may happen. Otherwise, they would not try it. I would like to suggest that each private pilot applicant be required to fly an aircraft in actual IFR conditions for at least a half to one hour.

This flight would naturally be conducted by a rated instrument instructor under an IFR flight plan. It would subject the applicant to actual loss of ground reference and the rigors of maintaining stability in turbulence, which is a lot different from a bright, calm day under the hood. I am not suggesting this flight be a part of the Private Pilot Flight Examination—just a familiarization exercise prior to it.

The object of this flight would be to allow the applicant to fly into IFR conditions and maneuver according to the instructors suggestions. Disorientation is almost sure to result and a lesson will be driven home.

Edward W. Michalowski
Tonawanda, N.Y.

We agree that such experience would be very valuable in impressing student pilots with the hazards of attempting to operate an aircraft by reference to instruments without adequate training. Your suggestion will be considered in drafting future changes to the private pilot experience requirements.

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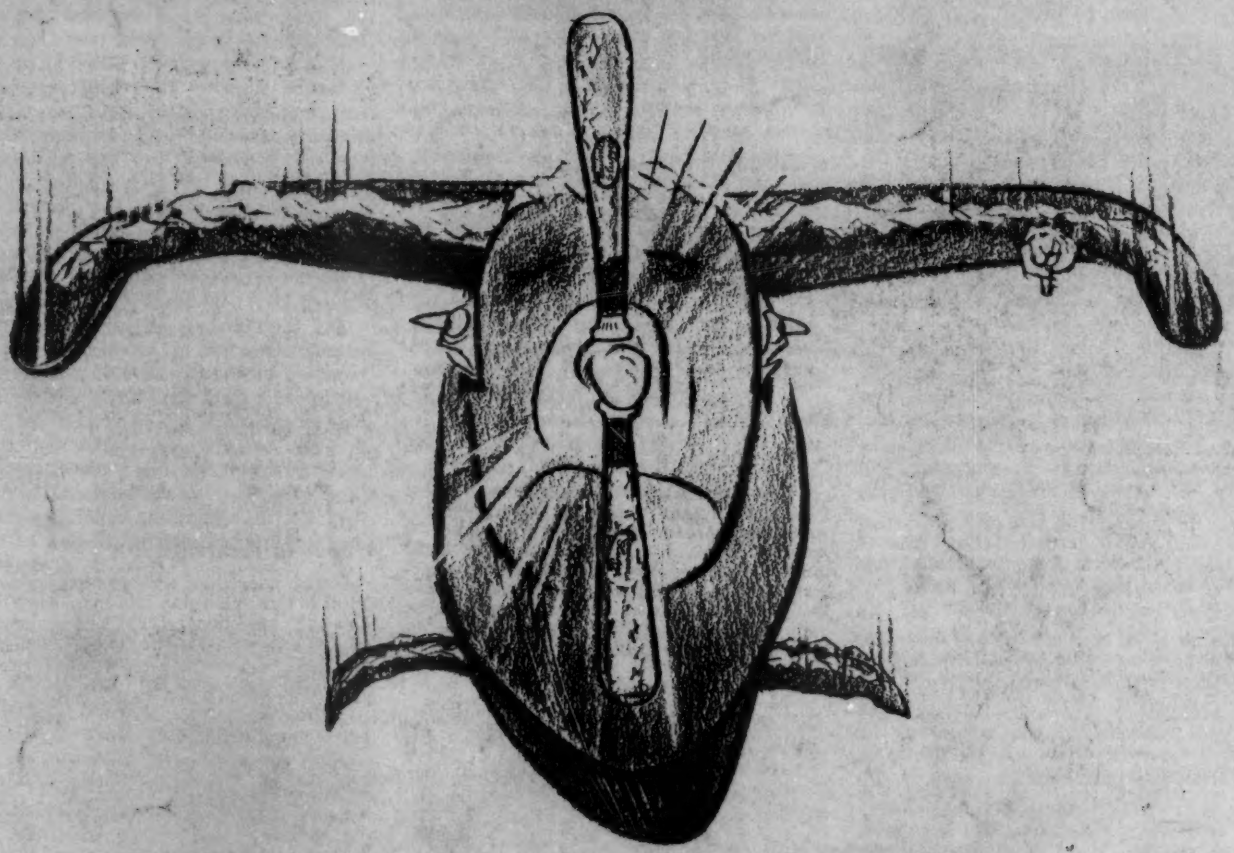

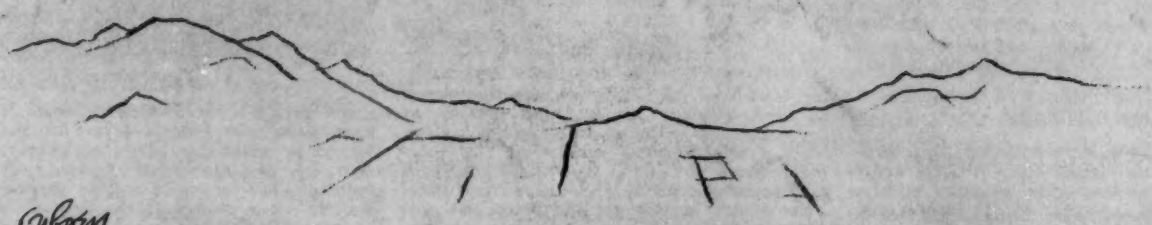

Osborn

Ain't nice

Suggested by Frank Parr
FAA Aeronautical Center,
Oklahoma City, Okla.